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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SORIN FAIBISH, JOHN FORECAST, UGUR SEZER,
PETER BIXBY, and WAYNE W. DUSO

Appeal 2007-3947
Application 09/893,825
Technology Center 2600

Decided: April 7, 2008

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and JOHN A.
JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 2-9, 11-14, 16-23, 25, and 26. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellants invented a video file server for providing video-on-demand access to movies which are ranked according to their popularity. Based on this ranking, a respective set of data movers are pre-assigned for servicing video streams associated with the video file server. In one aspect of the invention, data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies.¹ Claim 2 is illustrative:

2. A video file server for providing clients with video-on-demand access to movies, the video file server comprising:

a cached disk storage system including a primary cache and disk storage for storing the movies; and

a multiplicity of data mover computers coupled to the cached disk storage system for streaming video data from the cached disk storage system to clients in a data network, each of the data mover computers having a local cache;

wherein the movies are ranked with respect to popularity, and a respective set of the data movers are pre-assigned for servicing video streams for each movie ranking; and

wherein the data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies.

¹ See generally Spec. 4:7-6:2.

The Examiner relies on the following prior art references to show unpatentability:

Mizutani	US 6,115,740	Sep. 5, 2000
Armstrong	WO 00/60861 A1	Oct. 12, 2000

Claims 2-9, 11-14, 16-23, 25, and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Armstrong and Mizutani.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of a patent that claims a combination of known elements, the Court in *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007) explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it,

either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.*, 127 S. Ct., at 1740-41. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner’s burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and

the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Regarding the independent claims, the Examiner's rejection essentially finds that Armstrong teaches a video-on-demand system with every claimed feature except for pre-assigning a set of data movers for servicing video streams for each movie ranking as claimed. The Examiner, however, cites Mizutani as teaching such a feature and concludes that the recited limitations would have been obvious to ordinarily skilled artisans at the time of the invention in light of these collective teachings (Ans. 3-19).

Appellants argue that the cited prior art does not teach or suggest the following recited features:

- (1) ranking movies with respect to popularity;
 - (2) pre-assigning a respective set of servers for servicing video streams for each movie ranking; and
 - (3) configuring the data movers in the respective sets of data movers differently for providing:
 - (a) more network interface resources for very popular movies, and
 - (b) more local cache memory resources for less popular movies.
- (App. Br. 19-25).

Regarding feature (1) above, both Appellants and the Examiner dispute the plain meaning of the term “rank” in interpreting the limitation calling for “ranking” the movies. To support their respective interpretations,

both Appellants and the Examiner provide competing dictionary definitions of the term “rank.”

Appellants’ definition of “rank” is “[t]o arrange in a series in ascending or descending order of importance.” With this definition, Appellants contend that the plain meaning of the term “ranking” is different from simply classifying movies as either frequently requested or not frequently requested, but involves arranging in a series in ascending or descending order of importance (App. Br. 18-19, Evidence Appendix; Reply Br. 1).

The Examiner, however, defines the term “rank” as “to determine the relative position of.” Based on this definition, the Examiner takes the position that the recited “ranking” limitation is fully met by merely determining the relative position of particular movies based on how frequently they are requested, as in Armstrong (Ans. 19; Appendix (providing copy of dictionary definition)).

Turning to the prior art, Appellants argue that Armstrong’s system differs significantly from the claimed invention in that each headend data mover in Armstrong has the same configuration with respect to cache resources and network interface resources. According to Appellants, the data movers of the claimed invention are configured differently by having fewer cache RAM cards and more network interface cards in those data movers assigned to store and service more popular movies than in other data movers that store and service less popular movies (App. Br. 19).

The Examiner responds that the primary storage partitions in Armstrong which store the most frequently requested (i.e., most popular) movies fully meet the recited “network interface resources.” The Examiner adds that Armstrong teaches providing additional storage for less popular movies (Ans. 21).

Regarding Mizutani, Appellants argue that Mizutani does not cure the deficiencies of Armstrong as Mizutani dynamically allocates contents in a video server system to suit changing conditions, but does not appear to care which contents are popular and which are not (App. Br. 24). The Examiner responds that Mizutani pre-assigns content to video servers based on number of anticipated accesses (i.e., its popularity) (Ans. 23-24).

The issue before us, then, is whether the collective teachings of Armstrong and Mizutani teach or suggest the following recited features:

- (1) ranking movies with respect to popularity;
- (2) pre-assigning a respective set of servers for servicing video streams for each movie ranking; and
- (3) configuring the data movers in the respective sets of data movers differently for providing:
 - (a) more network interface resources for very popular movies, and
 - (b) more local cache memory resources for less popular movies.

For the following reasons, we find features (1) and (2) reasonably suggested by the cited references. However, we reach the opposite conclusion with respect to feature (3).

Armstrong discloses in Figure 2 an interactive video distribution system with plural headends 210 coupled via access network 250 to corresponding plural neighborhoods 230 which include subscriber equipment. The headends comprise, among other things, a video stream server 214 and a primary storage device 216 which is apportioned into at least two storage partitions: (1) a primary storage partition 218, and (2) a secondary storage partition 219 (Armstrong 9:3-30; Fig. 2). The primary storage partition stores frequently requested video assets, and the secondary storage partition stores infrequently requested video assets (Armstrong 10:1-12).

While infrequently requested video assets are typically stored on the secondary storage partition at a single headend, they may be stored at other headends (Armstrong 10:10-19). When such an asset is requested, the remote headend is contacted and delivers the asset to the subscriber via the local headend and access network 250 (Armstrong 10:27-11:11).

Alternatively, upon receiving the streamed information from the remote headend, the video stream server at the local headend stores the assets locally and transmits the infrequently requested video information to the requesting subscriber over the access network (Armstrong 11:18-23).

At the outset, we agree with the Examiner that Armstrong teaches “ranking” movies with respect to their popularity, as claimed. While Armstrong’s video assets are classified as “frequently requested” and “infrequently requested,” these two classifications are clearly tied to the

assets' popularity.² We therefore find that classifying the assets in this manner reasonably corresponds to "ranking" the video assets under either the Appellants' or the Examiner's definitions. Nothing in the claim precludes two such "ranks" of assets (i.e., classifications) as in *Armstrong*.

Nevertheless, we agree with Appellants (App. Br. 19) that each headend data mover in *Armstrong* appears to have the *same* configuration with respect to cache and network interface resources. That is, we find nothing in *Armstrong* to suggest that these data movers are somehow configured differently to provide (1) *more* network interface resources for very popular movies, and (2) *more* local cache memory resources for less popular movies, as claimed. We emphasize that the recited term "more" in this regard is significant: the respective data movers must have *additional* network interface and local cache resources for the particular type of movie as compared to other data movers.

While Appellants' argument (App. Br. 19) with respect to the disclosed invention's data movers that store and service more popular movies have fewer RAM cache *cards* and more network interface *cards* is not commensurate with the scope of the independent claims (which merely recite *resources* -- not cards), we nonetheless fail to see how the data movers in *Armstrong* meet this broader disputed limitation. While the primary storage partition of a particular headend stores more popular video assets

² See *Armstrong*, at 5:1-3 ("The video assets considered *popular*, as determined by the frequency of subscriber requests, are stored on the primary storage partitions in all the neighborhoods.") (emphasis added).

than the secondary partition, nothing on this record teaches or suggests that these partitions -- or any other aspects of the headend -- are configured differently with respect to each other.

To be sure, Armstrong does teach that a headend can receive an infrequently requested video asset from another headend, and store such an asset locally upon transmitting the asset to the subscriber (Armstrong 11:18-23). But such storage does not mean that *more* local cache memory resources are provided for such assets. That is, even assuming, without deciding, that such received infrequently requested assets were stored in local cache memory at the local headend, such local storage hardly means that there is *more* local cache memory resources in that headend as compared to the others. Rather, each headend in Armstrong appears to be configured similarly with respect to memory and network interface resources.

The disclosure to Mizutani does not cure the deficiencies of Armstrong in this regard. Mizutani discloses a video server system that dynamically allocates content between video servers based in part on their predicted number of simultaneous accesses (Mizutani, col. 3, l. 48 - col. 4, l. 11; col. 6, ll. 8-54; col. 12, ll. 10-38; Figs. 1, 2, and 7). Based on this disclosure, we agree with the Examiner that applying such a dynamic content allocation scheme to Armstrong's system would reasonably suggest a pre-assignment of content for both the frequently and infrequently requested assets. But this limited teaching from Mizutani does not suggest

providing (1) *more* network interface resources for very popular movies, and (2) *more* local cache memory resources for less popular movies, as claimed.

For the foregoing reasons, we will not sustain the Examiner's rejection of independent claim 2 or the claims dependent thereon for similar reasons. Likewise, we will not sustain the Examiner's rejection of independent claims 12, 16, and 26 or the claims dependent thereon for similar reasons as they recite commensurate limitations.

DECISION

We have not sustained the Examiner's rejection with respect to any of the claims on appeal. Therefore, the Examiner's decision rejecting claims 2-9, 11-14, 16-23, 25, and 26 is reversed.

REVERSED

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